Marta Mazzocco

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Employment

- **School of Mathematics** — **University of Birmingham, UK**
  Chair in Mathematics — *February 2018 – open ended*

- **Department of Mathematical Sciences** — **Loughborough University, UK**
  Professor — *October 2008 – January 2018*
  - May 2014 – 31st January 2018 Full Professor
  - 1st October 2008 – 30th April 2014 Reader (Associate Professor)

- **Department of Mathematics** — **The University of Manchester UK**
  Professor — *January 2005 – September 2008*
  - 1st June – 30th September 2008 Senior Lecturer (Associate Professor)
  - 1st January 2005 – 30th May 2008 Lecturer (Assistant Professor)

- **Department of Pure Mathematics and Mathematical Statistics** — **Cambridge University, UK**
  Temporary Lecturer (Assistant Professor) — *July 2002 – December 2004*
  - First woman to be appointed by open call to a University Lecturer position in Pure Mathematics.
  - Additional appointment as Fellow in Mathematics, Jesus College, Cambridge.

- **Mathematical Institute** — **Oxford University, UK**
  Research Assistant (Supervisor: Nigel Hitchin) — *July 1999 – June 2002*
  - Additional appointment as Junior Research Fellow, Worcester College, Oxford.

- **Mathematical Sciences Research Institute** — **Berkeley, CA, USA**
  Post Doc — *November 1998 – June 1999*

Education

- **PhD in Mathematical Physics** — **Trieste, Italy**
  International School of Advanced Studies, SISSA — *1994 – 1998*
  - PhD thesis resulted in two papers, one on Invetiones Mathematicae with 249 citations, the other on Mathematische Annalen with 88 citations (Google Scholar).

- **First degree and Master** — **Padova, Italy**
  Universitá di Padova — *1988 – 1994*
  - Summa cum Laude
  - Master thesis resulted in published paper with 14 citations (Google Scholar).

Languages

- **English:** Advanced
- **Italian:** Mother tongue
- **Dutch:** Intermediate
- **French:** Intermediate
- **Spanish:** Beginner

Research

I specialise in Integrable Systems, an area at the crossroads of many disciplines including Analysis, Geometry, Mathematical Physics and Algebra. My interests include isomonodromic deformations, Frobenius manifolds, (quantum) Teichmüller theory, quantum algebra and mirror symmetry.

My research timely fits international efforts to push the frontiers between algebraic geometry and mathematical physics as demonstrated by the recent investments by ERC, including two Synergy grants (2019 HyperK, 2018 ReNewQuantum) and several starting/consolidator/advanced grants, by three Simons Collaborations, as well as by upcoming programmes at the most prestigious research institutes world wide, including the Newton Institute, the Fields Institute in Canada, the Simons Centre and MSRI in the USA. Five of twenty one plenary speakers at ICM 2022 were in (algebraic) geometry and mathematical physics.

I have an outstanding record in attracting external funding totalling about €2M. In 2003, I obtained an Engineering and Physical Sciences Research Council (EPSRC) First Grant while still on a temporary job; according to the EPSRC administrators, this is very rare, if not the unique case they know of. In 2006, I was awarded an EPSRC Advanced Research Fellowship, a very prestigious award that buys off teaching and administrative duties for 5 years, then in 2008, 2012, 2017, 2020 I won four further major research grants. My referee reports have always been extremely supportive including comments such as "The proposal is certainly original and is likely to open new areas of mathematics. It has the potential to generate significant advances, and is adventurous in the sense that the research requires mastery and exploitation of very deep mathematical ideas", "the PI has a well-established record of achievement", "highly qualified mathematical scientist with well establish international reputation".

Grants won as Principal Investigator

- **Leverhulme Trust** — £389.000
  Research Project Grant — *June 2022 – May 2026*
  - Phd studentship for 4 years
  - 20% Teaching position for 4 years
  - Two Research Assistant positions for 2 years each
  - Travel and subsistence
  - Software licences and computer equipment

- **EPSRC** — £370.542
  Research Grant — *October 2017 – September 2020*
  - Six months Visiting Professor position
  - Two Research Assistant positions for two years each
  - Travel and subsistence
  - Software licences and computer equipment

- **EPSRC** — £111.837
  Research Grant — *June 2012 – May 2013*
  - One Visiting Professor position for a year
  - Travel and subsistence
  - Software licences and computer equipment

- **EPSRC** — £100.819
  Research Grant — *December 2008 – February 2010*
  - One Visiting Professor position for a year
  - Travel and subsistence
  - Software licences and computer equipment

- **EPSRC** £670.658
  Advanced Fellowship *October 2006 – February 2012*
  - My full time salary for 5 years
  - Flexible funds to invite Visiting Professors
  - Travel and subsistence
  - Software licences and computer equipment

- **EPSRC** £176.894
  First Grant *October 2004 – September 2007*
  - One Research Assistant positions for three years
  - Travel and subsistence
  - Software licences and computer equipment

Grants won as Sponsor

- **Leverhulme Trust** £20.000
  N. Joshi, Visiting Professorship *February 2020 – May 2023*

- **Maria Sklodowska-Curie** £187.444
  N. Nikolaev, Individual Fellowship *September 2022 – August 2024*

Organisation of Conferences

- **Mirror Symmetry and Cluster Algebra** **University of Cambridge**
  Department of Mathematics and Mathematical Statistics *July 2019*

- **Integrable systems, discrete symmetries, Painlevé equations and special functions** **Madrid**
  Institute of Mathematical Science ICMAT *September 2017*

- **Integrability in algebra, geometry and physics: new trends** **Ascona, Switzerland**
  Centro Congressi Stefano Franscini *July 2015*

- **Nonlinear Evolution Equations and Dynamical Systems** **Pula, Italy**
  NEEDS *June 2015*

- **Nonlinear Evolution Equations and Dynamical Systems** **Orthodox Academy of Crete, Greece**
  NEEDS *July 2012*

- **Integrable Systems in Pure and Applied Mathematics** **Alghero - Sardinia, Italy**
  Conference in honour of Boris Dubrovin's 60th birthday *June 2010*

- **Nonlinear Evolution Equations and Dynamical Systems** **Isola Rossa, Sardinia, Italy**
  NEEDS *May 2009*

Invited Academic Talks at International Conferences and Colloquia (past 10 years)

- British Mathematical Colloquium, Algebra Section, Bath, 3-6 April 2023.
- IMTech Colloquium, Barcelona, 8 February 2022.
- XII workshop on *"Geometric Correspondences of Gauge Theories"*, SISSA, Trieste, Italy, June 2022.
- *"Non-Commutative Algebras, Representation Theory and Special Functions"*, CRM Montreal, June 2022 (online).
- *"Quantisation Days"*, MIT and Bonn, December 2021 (online).
- 65th meeting of the Australian Mathematical Society, Integrable Systems Section, December 2021 (online).
- Australian and New Zealand Association for Mathematical Physics, September 2021 (online).
- *"Integrable Systems in Geometry and Mathematical Physics"*, Trieste, June 2021 (online).
- Web-seminar on Painlevé Equations, Kobe Japan and Rennes France, January 2021 (online).
- International Conference on *"Analytic Theory of Differential and Difference Equations"*, Moscow, January 2021 (online).
- *"Hypergeometry, Integrability and Lie Theory"*, Lorentz Center, Leiden, The Netherlands. December 2020 (online).
- *"Categorifications in Representation Theory"*, Leicester UK, September 2020 (online).
- Global Poisson Webinar, Geneve Switzerland, July 2020 (online).
- Virtual Integrable Systems Seminar, ICMS Edinburgh, UK, June 2020 (online).
- *"Elliptic Integrable Systems, Special Functions and Quantum Field Theory"* satellite of String Math, Nordita, Stockholm, Sweden, June 2019.
- *"Geometry and Physics of Quantum Curves"*, Banff, Alberta, September 2018.
- Morning speaker at the British Mathematical Colloquium, St Andrews, June 2018.
- *"Retakh Fest"*, Angers, France, June 2018.
- Plenary speaker at the 14th International Symposium on *"Orthogonal Polynomials, Special Functions and Applications"*, July 2017.
- Minicourse at the School and Workshop on *"Algebraic Geometry and Physics"*, SISSA, Italy, June 2017.
- *"Painlevé Equations and Discrete Dynamics"*, Banff International Research Station, Canada, October 2016.
- Plenary speaker at Nigel Hitchin's 70st Birthday Conference, Mathematical Institute and Clay Institute, Oxford, UK, September 2016.
- Integrable Systems Conference, Congressi Stefano Franscini, Ascona (Switzerland), June 2016.
- 5th Workshop on *"Combinatorics of Moduli Spaces, Cluster Algebras and Topological Recursion"*, Moscow, May 2016.
- Colloquium Speaker at Columbia University, NY, MIT Boston and North Eastern University, Boston, February/March 2016.
- Opening lecture at the 150Th LMS Hardy Lecture, De Morgan House, London, June 2015.
- *"Representation Theory, Special Functions and Painlevé Equations"*, RIMS Kyoto, March 2015.
- X Brunel-Bielefeld Workshop on *"Random Matrix Theory"*, Brunel University London, December 2014.
- *"Integrability and Isomonodromy in Mathematical Physics"*, Lorentz Center, Leiden, The Netherlands, July 2014.
- French-Japanese conference on Painlevé equations, Strasbourg, France, September 2013.
- *"Hamiltonian PDEs, Frobenius Manifold and Deligne-Mumford Moduli Spaces"*, SISSA, Trieste, Italy, November 2013.
- *"Random Tilings"*, Simons Center, Stony Brook, USA, February 2013.

Publications

All authors contribute equally and appear in alphabetical order.

[1] I. Gaiur, M. Mazzocco and V. Rubtsov, Isomonodromic deformations: Confluence, Reduction and Quantisation, *Communications in Mathematical Physics,* DOI 10.1007/s00220-023-04650-8, 76 pages (2023).

[2] L. Chekhov, M. Mazzocco and V. Rubtsov, "Quantised Painlevé monodromy manifolds, Sklyanin and Calabi-Yau algebras", *Advances in Mathematics,* **376** 52 pages (2021).

[3] I. Bobrova and M. Mazzocco, "The sigma form of the second Painlevé hierarchy", *Journal of Geometry and Physics,* 104271 (2021).

[4] C. Horrobin and M. Mazzocco, "Stokes phenomenon arising in the confluence of the Gauss hypergeometric equation", in Asymptotic, Algebraic and Geometric Aspects on Integrable Systems: In Honor of Nalini Joshi On Her 60th Birthday, Springer Proceedings in Mathematics and Statistics, (2020).

[5] T. Koornwinder and M. Mazzocco, "Dualities in the q-Askey Scheme and degenerate DAHA", *Studies in Applied Mathematics,* **141** 4:424–473 (2018).

[6] P. Calligaris and M. Mazzocco, "Finite orbits of the pure braid group on the monodromy of the 2-variable Garnier system", *Journal of Integrable Systems,* **3**, 1–35, (2018).

[7] L. Chekhov, M. Mazzocco and V. Rubtsov, "Algebras of quantum monodromy data and decorated character varieties" in *Geometry and Physics : A Festschrift in honour of Nigel Hitchin,* Oxford University Press (2018).

[8] M. Mazzocco, "Embedding of the rank 1 DAHA into $Mat(2, T_q)$ and its automorphisms", *Advanced Studies in Pure Mathematics* **76** (2018).

[9] L. Chekhov and M. Mazzocco, "On a Poisson space of bilinear forms with a Poisson Lie action", *Russian Mathematical Surveys* **72** 6:1109–1156 (2018).

[10] L. Chekhov and M. Mazzocco, "Colliding holes in Riemann surfaces and quantum cluster algebras", *Nonlinearity,* **31**, 1–54 (2017).

[11] M. Mazzocco, "Confluences of the Painlevé equations, Cherednik algebras and q-Askey scheme", *Nonlinearity,* **29**, no.9:2565–2608 (2016).

[12] L. Chekhov, M. Mazzocco and V. Rubtsov, "Painlevé monodromy manifolds, decorated character varieties and cluster algebras", *International Mathematics Research Notices,* 1–53, (2016).

[13] M. Mazzocco, "Non-Symmetric Basic Hypergeometric Polynomials and Representation Theory for Confluent Cherednik Algebras", *SIGMA* **10**, 116, 10 pages, (2014).

[14] L. Chekhov and M. Mazzocco, "Quantum ordering for quantum geodesic functions of orbifold Riemann surfaces", in *Topology, Geometry, Integrable Systems, and Mathematical Physics: Novikov's Seminar 2012-2014,* American Mathematical Society Translations–Series 2, **234** (2014).

[15] L. Chekhov and M. Mazzocco, "Poisson algebras of block-upper-triangular bilinear forms and braid group action", *Communications in Mathematical Physics* **322**, no.1:49–71 (2013).

[16] M. Mazzocco and R. Vidunas, "Cubic and quartic transformations of the sixth Painlevé equation in terms of Riemann-Hilbert correspondence", *Studies in Applied Mathematics,* **130**, 1:17–48 (2013).

[17] L. Chekhov and M. Mazzocco, "Teichmüller spaces as degenerated symplectic leaves of the Dubrovin-Ugaglia bracket", *Phisica D,* **241**, no.23–24:2109–2121 (2011).

[18] L. Chekhov and M. Mazzocco, "Isomonodromic deformations and twisted Yangians arising in Teichmüller theory", *Advances in Mathematics* **226**, no.6:4731–4775 (2011).

[19] L. Chekhov and M. Mazzocco: "Block triangular bilinear forms and braid group action", in *Tropical Geometry and Integrable Systems*, AMS Contemporary Mathematics **580**, (2011).

[20] L. Chekhov and M. Mazzocco, "Shear coordinate description of the versal unfolding of the D_4 singularity", *Journal of Physics A: Mathematics and General* **43**, no.44:442002–442015 (2010).

[21] L. Chekhov and M. Mazzocco, "Orbifold Riemann surfaces: Teichmüller spaces and algebras of geodesic functions", *Russian Mathematical Surveys,* **64**, no.6:1079–1130 (2009).

[22] M. Mazzocco and M. Y. Mo: "The Hamiltonian structure of the second Painlevé hierarchy", *Nonlinearity,* **20**, no. 12:2845–2882 (2007).

[23] K. Kajiwara, M. Mazzocco and Y. Ohta: "A Remark on the Hankel Determinant Formula for Solutions of the Toda Equation", *Symmetries and Integrability of Differential Equations VII, J. Phys. A.* **40**, no.42:12661-12675 (2007).

[24] B. Dubrovin and M. Mazzocco, "Canonical structure of the Schlesinger systems' *Communications in Mathematical Physics,* **271**, 289–373 (2007).

[25] N. Joshi, K. Kajiwara and M. Mazzocco, "Generating Function Associated with the Determinant Formula for the Solutions of the Painlevé IV Equation", *Funkcialaj Ekvacioj* **49** 451–468 (2006).

[26] P.A. Clarkson, N. Joshi and M. Mazzocco, "The Lax pair for the mKdV Hierarchy", *Asymptotic Theories and Painlevé Equations, Séminaires et Congrès*, **14**: 155–166 (2006).

[27] B. Dubrovin and M. Mazzocco, "On the reductions and classical solutions of the Schlesinger equations", *Differential equations and quantum groups, Andrey A. Bolibruch memorial volume* , IRMA Lectures in Mathematics and Theoretical Physics **9** 157–187 (2006).

[28] N. Joshi, K. Kajiwara and M. Mazzocco, "Generating Function Associated with the Determinant Formula for the Solutions of the Painlevé II Equation", *Astérisque* **297**: 67–78 (2004).

[29] M. Mazzocco, "Irregular isomonodromic deformations for Garnier systems and Okamoto's canonical transformations", *Journal of the London Mathematical Society* **70**, 405–419 (2004).

[30] Nalini Joshi and M. Mazzocco, "Existence and Uniqueness of Tri-tronquée Solutions of the second Painlevé hierarchy", *Nonlinearity* **16**, no.2:427–439 (2003).

[31] M. Mazzocco, "The Geometry of the Classical Solutions of the Garnier Systems", *International Mathematics Research Notices,* **2002**, no.12:613–646 (2002).

[32] M. Mazzocco, "Painlevé Sixth Equation as Isomonodromic Deformations Equation of an Irregular System", *The Kowalewski property,* CRM Proceedings and Lecture Notes **32**:221–240 (2002).

[33] M. Mazzocco, "Rational Solutions of the Painlevé VI Equation", *Journal of Physics A: Mathematics and General* **34**:2281–2294 (2001).

[34] M. Mazzocco, "Picard and Chazy Solutions to the Painlevé VI Equation", *Mathematische Annalen* **321**, no. 1:131–169 (2001).

[35] B. Dubrovin and M. Mazzocco, "Monodromy of Certain Painlevé VI Transcendents and Reflection Groups", *Inventiones Mathematicae* **141**, no. 1:55–147 (2000).

[36] M. Mazzocco, "KAM Theorem for Generic Analytic Perturbations of the Euler System", *Z. angew. Math. Phys.* **48**, no. 2:193–219 (1997).

Prefaces to Special Issues:

[37] D. Gómez-Ullate, S. Lombardo, M. Manãs, M. Mazzocco, F. Nijhoff and M. Sommacal, "Integrability and nonlinear phenomena", *Journal of Physics A: Mathematics and General* **43** (2010), no. 43.

[38] P.A. Clarkson, N. Joshi, F.W. Nijhoff, M. Mazzocco and M. Noumi, Preface to "One hundred years of PVI, the Fuchs–Painlevé equation", *Journal of Physics A: Mathematics and General* **39** i-iv (2006).

Research Metrics

My overall Research Interest score is higher than 87% of all Researchgate members, and higher than: 94% in Algebra, 92% in Geometry and Topology and 91% in Analysis.
I have 1089 citations on Google Scholar, 925 on Researchgate and 480 on MatSciNet.

Leadership

Geometry and Mathematical Physics Group

Since February 2018, I am based at the University of Birmingham where I have established and led a new research group in Geometry and Mathematical Physics. In five years, I have been able to attract five new colleagues to permanent positions: Dr Tyler Kelly, Dr Andrea Brini (who then moved to Sheffield for personal reasons), Dr Ana Peon-Nieto, Dr Cyril Closset and Dr Michel van Garrel. At the moment the group has also five Post Docs, nine PhD students and a Teaching Fellow.

I have always been committed to implementing good practice in creating a modern and inclusive research and teaching environment, including considerations of Integrity and Equality, Diversity and Inclusion. To attract, nurture and support the brightest early career researchers, we have designed an all–round formative experience for our post docs and PhD students to encourage them to express their creativity and propose ideas for investigation. This comprises several informal weekly activities, including readings groups, half-hour introductory talks before external seminars and lunches. There is always free coffee for all in my office. I am particularly proud about the fact that the Geometry and Mathematical Physics is now a very diverse and inclusive group with a high number of non–white, LGBTQ+ and female members.

I have mentored several current and past group members to win a total of more than $£3$M in external funding, in particular:

- Cyril Closset, who recently was awarded an extension to his Royal Society University Research Fellowship for $£430.186$ and a New Investigator Award for $£366.143$.
- Dr Tyler Kelly, who won a New Investigator Award for $£234.458$ and subsequently a UKRI Future Leaders Fellowship for $£1.142.744$.
- Dr Nikita Nikolaev, who won a Marie Sklodowska-Curie Individual Fellowship for $£187.444$.
- Dr Ilia Gaiur, my PhD student, who won the Cecil King Travel Scholarship, only one a year awarded in Pure Mathematics by the London Mathematical Society.
- Dr Tim Magee, who on my suggestion acted as research Co-I rather than nominated PDRA in the EPSRC standard grant EP/V002546/1 and moved to Kings College London.
- Dr Andrea Brini, who won a Early Career Fellowship for $£975192$ and subsequently moved to Sheffield to join his wife.
- Dr Giordano Cotti, invited for a EPSRC postdoctoral fellowship interview, declined to move to the University of Lisbon.

I have acted as official mentor for promotion to Associate Professor of several colleagues from different research groups; helping them to understand how to write a successful promotion case based on their strengths and vision. I also informally mentor several colleagues at other institutions around the world.

Membership External Boards and Committees (past 10 years)

- Member of the Banff Research Station Scientific Board, 2022 – 2024.
- Member of the Institute of Mathematics and Applications Research Committee since December 2014.
- Member of the ICMS Advisory Board, June 2018 – March 2022.
- Member of the London Mathematical Society Nominating Committee December 2016 – December 2018.
- Member of the Council of the European Mathematical Society May 2016 – May 2019.
- Chair of the London Mathematical Society Prospects in Mathematics Committee, 2016 – 2018.
- Member of the London Mathematical Society Women in Mathematics committee May 2013 – May 2017.

Membership External Panels (past 10 years)

- David Crighton medal, member of the Jury 2023.
- Hiring panel member for a Research Professor at the Katholieke Universiteit Leuven, Belgium 2023.
- Chair of the EPSRC Mathematical Sciences Prioritisation panel May 2022.

- Dubrovin Medal Panel, SISSA, 2021.
- External member of hiring panel for assistant professor in Mathematics at ETH Zurich, February 2020.
- Interview panel member for L'Oreal-Unesco Rising Talents Programme, February-May 2020.
- Panel member for the Royal Society Newton International Fellowship Programme since 2018.
- External member of hiring panel for a Lectureship in Glasgow, January 2018.
- January 2017: member of the EPSRC Mathematical Sciences Fellowships Interviews Panel.
- Member of the European Science Foundation College of Expert Reviewers since October 2016.
- May 2016: external member for a position of Professeur at Dijon University.
- May 2014: member of the selection panel for the Dean of Science, Loughborough University.

Outreach

From the start of my career, I have been a keen participant in out-reach activities at the University of Cambridge, at the University of Manchester, at Loughborough University, and more recently, at the University of Birmingham. My approach is to challenge the idea that Pure Mathematics is incomprehensible to the public by delivering "hands on" talks where I explain complicated concepts such as curvature, genus, non–commutative algebra, by using crochet and paper models I have created, and by every day examples. In 2016, as a testament to my ability to communicate to the wider public, I was tasked to write an editorial for the IMA Mathematics Today about Nigel Hitchin mathematical achievements.

Since I have been at Birmingham, I have also started a collaboration with the Barber Institute of fine Arts to explain the mathematics behind Gabo's work. I involved one of my former master students, who has now moved on to study for a PhD in the USA, to write a matlab simulation showing how Gabo's sculpture Linear Construction in Space no.1 is in fact an envelope of planar curves. We participated and gave two informal talks at an open evening at the Barber in February 2020. With my current master student, we are working on writing a short paper for the general public about origami in hyperbolic geometry.

Training of Post-Graduate Students:

- September 2022 – August 2026: Benedetta Facciotti and Alexander Fruh, both full time PhD students.
- September 2022 – August 2025: Mikhail Vasiliev, 2nd year PhD stuydent from Moscow.
- September 2020 – August 2024: Davide del Martello, full time PhD student.
- September 2019 – July 2022 Dr Ilia Gaiur, completed PhD on 19/06/2022.
- October 2014 – 2018: Dr Calum Horrobin, completed PhD on 22/01/2018.
- September 2013 – March 2017: Dr Pierpaolo Calligaris completed PhD on 26/05/2017.

Supervision of Post-Docs

- 2022-2025: Dr Omar Kidwai and Dr Nikita Nikolaev.
- 2021 Dr Livia Campo, currently JSPS fellow.
- 2021 Dr Harini Desiraju, currently post doc at Sydney.
- 2019 – 2020 Dr Giordano Cotti, currently post doc at the University of Lisbon.
- 2018 – 2020: Dr Timothy Magee, currently EPSRC research co-I at KCL.
- 2017 – 2018: Dr Idan Eisner, left academia.
- 2004 – 2007: Prof Guido Carlet, currently at Dijon University.

External Examiner for PhD

- Hernández Iglesias, Universiteit van Amsterdam, Supervisor S. Shadrin, 2022.
- Jasper Oelen, University of Loughborough, Supervisor: S. Lombardo, 2021.
- Vincent Knibbler, University of Northumbria, Supervisor: S. Lombardo, 2014.
- Mitul Shah, Oxford University, Supervisor: N. Woodhouse. 2010.
- Tegan Morrison, University of Sydney, Supervisor: Nalini Joshi, 2009.
- Man Mo Yue, Oxford University, Supervisor: N. Woodhouse. 2004.

Administrative Responsibilities

- **Head of Pure Mathematics** — **University of Birmingham, UK**
  School of Mathematics — *September 2021 – August 2027*
  - Advocate for Pure Mathematics at School and University level
  - Serve in most internal hiring panels for faculty positions within the School of Mathematics
  - Contribute to the School of Mathematics Research Strategy
  - Encourage and monitor funding applications by colleagues in Pure Mathematics
  - Act as contact point for EPSRC
  - Evaluate and allocate incoming PhD student applications
  - Teaching curriculum development

- **Academic Representative** — **University of Birmingham, UK**
  University Senate — *August 2018 – July 2024*
  - Monitor the University performance in Research, Teaching and Enterprise activities
  - Serve in academic appeals and dismissal panels
  - Advise the Senior Leadership Team on all matters relating Research, Teaching and Enterprise activities

- **Head of Geometry and Mathematical Physics** — **University of Birmingham, UK**
  School of Mathematics — *February 2018 – August 2021*
  - Set the group Research Strategy
  - Campaign to open positions in group Geometry and Mathematical Physics (successful 4 times)
  - Encourage and monitor funding applications by group members
  - Participate in appointing, promotion, scholarship and many other committees.

- **Director of Equality and Diversity** — **Loughborough University, UK**
  School of Science — *October 2014 – January 2018*
  - Deputise Dean for the School of Science
  - Responsible for hiring, promoting, and performance reviewing of academic staff, budget decisions and managing student recruitment and experience
  - Design and implement the Equality and Diversity Strategy at all levels of the Academic career
  - Collect and analyse data to inform the School of Science
  - Participate in appointing, promotion, scholarship and many other committees.

- **Academic Representative** — **Loughborough University, UK**
  Human Resources Committee — *October 2014 – January 2018*
  - Monitor decisions about probation and promotion at University Level
  - Introduce and implement Human Resources policies

- **Athena Swan Champion** — **Loughborough University, UK**
  School of Mathematics — *October 2013 – September 2015*
  - Introduce and implement good practice in all aspects of the academic career
  - Organise Equality and Diversity training for colleagues
  - Organise supporting activities aimed at female academics
  - Submit 66 pages document and action plant to win Silver Award (successful - only five awarded nationally that year)

- **International Exchange Programme Coordinator** — **Loughborough University, UK**
  School of Mathematics — *October 2012 – September 2013*
  - Encourage undergraduate students to participate in Erasmus and other exchange programmes
  - Set up new exchange programmes
  - Mentor incoming exchange students

Teaching Experience

I have taught a variety of modules at the University of Birmingham, Loughborough University, the University of Manchester and Cambridge University. These include advanced courses (final year or master level), such as Algebraic Topology, as well as more basic courses, such as Differential Equations, and service teaching Mathematics for Physics for the Physics department.

Current Teaching

- Linear Programming, second year course, about 250 students
- Three groups of personal tutees for a total of 19 students
- Supervision of eight third-year project students
- Supervision of one master student

Teaching Design

- Spring 2020: I designed a new module called Algebraic Topology for year 3 and 4 undergraduate students students.
- Autumn 2007: I designed the syllabus and set all didactic material for an Integrable Systems course within the MAGIC consortium. I was awarded $£2.000$ for preparation costs.
- Spring 2005: In Cambridge, I have contributed to the redesign of the syllabus of Complex Analysis.
- October-November-December 2003: In Cambridge, I designed a completely new course entitled "Introduction to Integrable Systems" (4th year, research informed teaching), including example sheets and exams.
- April-May-June and October-November-December 2002: I designed a completely new course titled "Ordinary Differential Equations in the Complex Domain" (4th year, research informed teaching).

Previous Teaching

- Differential Equations, second year undergraduate course, about 230 students, University of Birmingham
- Algebraic Topology, fourth year undergraduate course, about 12 students, University of Birmingham
- Mathematics for Physics 2, first year undergraduate service course, about 60 students, Loughborough University
- Fourier Analysis and Partial Differential Equations, second year undergraduate course about 120 students, Loughborough University
- Mathematics Report, third year undergraduate course, about 60 students, Loughborough University
- Classical Mechanics, second year undergraduate course, about 60 students, the University of Manchester
- Perturbation Methods and Asymptotic Expansions, third year undergraduate course, about 100 students, the University of Manchester
- Functional analysis, third year undergraduate course, about 60 undergraduates, Cambridge University
- Introduction to Integrable Systems, master course, about 15 students, Cambridge University
- Ordinary Differential Equations in the Complex Domain, master course, about 15 students, Cambridge University